

Title (en)  
METHOD FOR PRODUCING SUBSTRATE FOR POWER MODULES

Title (de)  
VERFAHREN ZUR HERSTELLUNG EINES SUBSTRATS FÜR LEISTUNGSMODULE

Title (fr)  
PROCÉDÉ DE FABRICATION DE SUBSTRAT POUR MODULES DE COURANT

Publication  
**EP 2811513 B1 20191218 (EN)**

Application  
**EP 13742826 A 20130201**

Priority

- JP 2012020171 A 20120201
- JP 2012020172 A 20120201
- JP 2012267298 A 20121206
- JP 2012267299 A 20121206
- JP 2013052347 W 20130201

Abstract (en)  
[origin: EP2811513A1] This power module substrate includes a copper plate that is formed of copper or a copper alloy and is laminated on a surface of a ceramic substrate 11; a nitride layer 31 that is formed on the surface of the ceramic substrate 11 between the copper plate and the ceramic substrate 11; and an Ag-Cu eutectic structure layer 32 having a thickness of 15 µm or less that is formed between the nitride layer and the copper plate.

IPC 8 full level  
**B23K 1/00** (2006.01); **B23K 35/02** (2006.01); **B23K 35/26** (2006.01); **B23K 35/30** (2006.01); **C04B 37/02** (2006.01); **C22C 5/06** (2006.01); **C22C 30/04** (2006.01); **H01L 23/373** (2006.01); **H05K 1/02** (2006.01); **H05K 1/03** (2006.01); **H05K 1/09** (2006.01); **H05K 1/18** (2006.01); **H05K 3/38** (2006.01); **H05K 13/04** (2006.01)

CPC (source: EP US)  
**B23K 1/0008** (2013.01 - EP US); **B23K 1/0016** (2013.01 - US); **B23K 35/025** (2013.01 - EP US); **B23K 35/262** (2013.01 - EP US); **B23K 35/30** (2013.01 - EP US); **B23K 35/3006** (2013.01 - EP US); **B23K 35/32** (2013.01 - EP US); **B23K 35/36** (2013.01 - EP US); **B23K 35/365** (2013.01 - EP US); **C04B 35/632** (2013.01 - EP US); **C04B 37/025** (2013.01 - EP US); **C04B 37/026** (2013.01 - EP US); **C22C 5/06** (2013.01 - EP US); **C22C 14/00** (2013.01 - EP US); **C22C 16/00** (2013.01 - EP US); **C22C 21/00** (2013.01 - EP US); **C22C 27/00** (2013.01 - EP US); **C22C 27/02** (2013.01 - EP US); **C22C 28/00** (2013.01 - EP US); **C22C 30/04** (2013.01 - EP US); **C22F 1/08** (2013.01 - EP US); **G01B 15/02** (2013.01 - US); **G01N 23/203** (2013.01 - US); **H01L 23/3735** (2013.01 - EP US); **H05K 1/0203** (2013.01 - US); **H05K 1/0271** (2013.01 - US); **H05K 1/0306** (2013.01 - US); **H05K 1/09** (2013.01 - US); **H05K 1/18** (2013.01 - US); **H05K 1/181** (2013.01 - US); **H05K 3/388** (2013.01 - US); **H05K 13/0465** (2013.01 - US); **B23K 2101/42** (2018.07 - EP US); **C04B 2235/44** (2013.01 - EP US); **C04B 2237/08** (2013.01 - EP US); **C04B 2237/121** (2013.01 - EP US); **C04B 2237/122** (2013.01 - EP US); **C04B 2237/124** (2013.01 - EP US); **C04B 2237/125** (2013.01 - EP US); **C04B 2237/126** (2013.01 - EP US); **C04B 2237/127** (2013.01 - EP US); **C04B 2237/128** (2013.01 - EP US); **C04B 2237/366** (2013.01 - EP US); **C04B 2237/368** (2013.01 - EP US); **C04B 2237/402** (2013.01 - EP US); **C04B 2237/407** (2013.01 - EP US); **C04B 2237/60** (2013.01 - EP US); **C04B 2237/704** (2013.01 - EP US); **C04B 2237/706** (2013.01 - EP US); **C04B 2237/708** (2013.01 - EP US); **C04B 2237/72** (2013.01 - EP US); **G01N 2223/633** (2013.01 - US); **H01L 2224/3225** (2013.01 - EP US); **H01L 2924/01322** (2013.01 - EP US); **H05K 2201/0175** (2013.01 - US); **Y10T 428/12542** (2015.01 - EP US)

Citation (examination)

- JP 2011108999 A 20110602 - MITSUBISHI MATERIALS CORP
- JP 2003197826 A 20030711 - TOSHIBA CORP
- US 2009267215 A1 20091029 - KITAHARA TAKESHI [JP], et al
- US 6033787 A 20000307 - NAGASE TOSHIYUKI [JP], et al

Cited by  
EP3578535A4; CN110382445A; EP3590909A4; US11798856B2; US10485112B2; KR20180133474A; EP3471517A4; US2021387290A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**EP 2811513 A1 20141210; EP 2811513 A4 20160127; EP 2811513 B1 20191218**; CN 104067386 A 20140924; CN 104067386 B 20190528; KR 102078891 B1 20200218; KR 20140127228 A 20141103; US 10375825 B2 20190806; US 2015208496 A1 20150723; US 2017034905 A1 20170202; US 9504144 B2 20161122; WO 2013115359 A1 20130808

DOCDB simple family (application)  
**EP 13742826 A 20130201**; CN 201380006339 A 20130201; JP 2013052347 W 20130201; KR 20147020529 A 20130201; US 201314374092 A 20130201; US 201615289453 A 20161010